

REMARKS/ARGUMENTS

Claims 1-28 are pending. Claims 19, 22, and 27 were objected to because they recited “the said” and “an hydraulic”. Applicant has amended these claims to correct these informalities, and has amended several other claims also containing “the said”.

Claims 1-3, 7, 12, 14-19, and 22-28 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,704,945 to Wagner et al. Claims 4-6, 8-11, 13, 20, and 21 were indicated to be allowable in subject matter, although objected to for being dependent on rejected claims.

Response to Rejections

Claim 1 has been amended for better clarity. Claim 1 is directed to a prosthetic knee joint mechanism in which two knee parts are rotatable relative to each other. One knee part defines a fluid-filled chamber and the other knee part is connected to a piston that is arranged in the chamber so as to divide the chamber into first and second variable-volume chamber parts. These chamber parts are interconnected by a fluid passage. Rotation of the knee parts relative to each other causes the piston to be rotatably driven in the chamber, such that one of the chamber parts becomes smaller and the other chamber part becomes larger, and hence fluid tends to flow through the fluid passage that interconnects them.

The knee joint mechanism of Claim 1 includes a load-activated knee-stabilizing device for resisting joint flexion, the stabilizing device comprising a valve associated with the fluid passage and including a valve member which is movable within a housing between an open position in which fluid can flow through the passage to allow joint flexion and a stabilizing position in which the valve member at least restricts such fluid flow. The valve member is movable towards its open position in response to fluid pressure in the interconnecting passage upstream of the valve member caused by application of a flexion torque to the knee joint

mechanism. The stabilizing device includes a weight-responsive valve control arrangement to at least resist movement of the valve member in the direction of its open position.

The Office Action apparently equated the valve of the claimed load-activated stabilizing device with one or both of valves 31 and 32 shown in Figure 6 of Wagner. As for the weight-responsive valve control arrangement of the stabilizing device, the Office Action cited col. 4, lines 13-39 of Wagner. That passage discusses a number of different elements, which makes it difficult to determine precisely what elements are considered to meet the claimed weight-responsive valve control arrangement.

The mechanism disclosed in Wagner features a knee-stabilizing valve including a plunger 23 that obstructs a passage 22 between two chambers 20 and 21 on opposite sides of a rotary piston 19. The plunger 23 is load-activated in the sense that it moves from a valve-open position to a stabilizing position when load is applied during a stance phase. There is a non-return valve 30 in a passage bypassing the stabilizing valve 23 so that extension of the knee joint is not restricted by the valve 23.

The valves 31 and 32 are described as controlling the swing phase (col. 4, lines 21-22). Thus, they have no knee-stabilizing function. These valves are arranged in series in the passage 22. As shown in Figure 7, the valves 31, 32 have a common ball member 34. The ball 34 is prevented from seating against either of the valve seats 36 by adjustable pins 33 that are spring-loaded, but if the fluid flow through the passage is rapid enough, the fluid pressure on the ball may be sufficient to overcome the spring force of the downstream pin 33 and seat the ball on the downstream seat.

The ball 34 thus does not meet the “valve member” of Claim 1 because it is not “movable towards its open position in response to fluid pressure in the interconnecting passage upstream of the valve member caused by application of a flexion torque to the knee joint mechanism.” In Figure 7 of Wagner, if knee joint flexion causes fluid to flow left to right in the passage, the ball 34 is not moved toward an open position, but rather is moved toward a flow-restricting position,

closer to the right-hand valve seat 36. A similar thing occurs if flexion causes fluid to flow right to left—the ball 34 is moved closer to the left-hand valve seat 36, thereby restricting the flow.

Furthermore, movement of the ball 34 is not resisted by a weight-responsive valve control arrangement that at least resists movement of the valve member in the direction of its open position, as required by Claim 1. Indeed, nothing acts on the ball 34 except the fluid flowing in the passage as described above.

The only weight-responsive valve in Wagner is the load-activated valve having the plunger 23, but the plunger is not movable toward an open position in response to fluid pressure in the interconnecting passage 22 upstream of the plunger 23 caused by application of a flexion torque, as required by Claim 1.

For at least the above-noted reasons, Claim 1 is not anticipated by Wagner.

Independent Claims 17 and 22 have substantially similar limitations as those of Claim 1 discussed above. Thus, Wagner also fails to anticipate Claims 17 or 22.

Independent Claim 27 also includes a valve generally similar to that of Claim 1. The valve comprises a valve member that is movable between an open position and a closed position in a valve cavity in response to an external force on the valve member, the cavity having an inlet port at least indirectly in communication with the fluid displacement chamber, and an outlet port which is closed by the valve member when in the closed position. The valve member is resiliently biased towards the closed position and has a piston part located in a bore which opens into the cavity on an opposite side of the cavity from the outlet port. The effective sealing area of the piston part in the bore is greater than the effective sealing area of the valve member at the outlet port, whereby the valve member is caused to move away from its closed position in the event of pressure in the cavity caused by an excessive flexion moment applied to the joint mechanism.

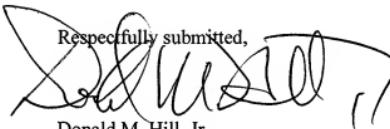
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The Office Action did not specifically point out what parts of Wagner are deemed to disclose these limitations in Claim 27. Applicant cannot find any disclosure in Wagner meeting these limitations. Accordingly, Claim 27 is not anticipated by Wagner.

Conclusion

Based on the above amendments and remarks, Applicant submits the application is in condition for allowance.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefor (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.


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